We Claim:

1. In a fragmenting rotor assembly for waste wood and other fragmentable material

a. a drive shaft and mechanism for driving said shaft in a direction of rotation;

b. a series of radially projecting hammers situated along the axis of said shaft and powered by said shaft, the hammers having a leading portion and a trailing portion;

c. replaceable fragmenting knives removably secured to the leading portions of said hammers; and

d. axially extending radially outer edges on the radially outermost portions of said knives having inclined portions extending in a radially inclined direction from a non-inclined, axially extending, initial work contacting portion on the radially outermost portion of said edges.

2. The rotor assembly of claim 1 wherein a series of discs are fixed axially along said shaft and pairs of said hammers mount axially between them at circumferentially spaced intervals, and alternating inclined edge portions of said knives on said hammers incline in axially opposite directions.

3. The rotor assembly of claim 2 wherein said knives are double edged and have like inner cutting edges on their inner radially projecting edges with inclined portions which, however, incline in a radially opposite

direction.

4. The rotor assembly of claim 3 wherein said hammers adjacent each disc are circumferentially spaced apart and deflecting members mount circumferentially between said hammers and project radially to an extent to deflect fragments ahead of said radially inner edges on said knives.

5. The rotor assembly of claim 4 wherein said deflecting members have outer ends rotating in a circumferential path lying radially short of the circumferential path of said radially outer edges of said knives.

6. The rotor assembly of claim 5 wherein said hammers and deflecting members are disposed in axially staggered helical formation, said hammers being mounted to space said knives circumferentially at substantially 180 degrees.

7. The rotor assembly of claim 6 wherein said deflecting members are generally delta shaped and are pivotally supported with said discs, and said axially aligned deflecting members and hammers are connected by axially extending rods extending through said inner ends of said members.

8. The rotor assembly of claim 7 wherein said deflecting members are disposed in substantially 180 degree spaced relation.

9. The rotor assembly of claim 5 wherein end

plates form a part of said rotor assembly and an endmost member adjacent each end plate carries an axially outwardly extending fragmenting body radially screening said end plates.

10. The rotor assembly of claim 7 wherein end plate assemblies are provided at each end of said rotor assembly and include end plates with cavities for receiving circumferentially adjustable locking plates, the end plates and locking plates both having rod receiving openings which can be aligned in a rod removing position.

11. In a fragmenting rotor assembly for waste wood and other fragmentable material

a. a drive shaft and mechanism for driving said shaft in a direction of rotation;

b. a series of radially projecting hammers situated along the axis of said shaft and powered by said shaft, the hammers having a leading portion and a trailing portion;

c. a series of discs forming a part of said shaft axially between at least a pair of radially aligned hammers;

d. double edged fragmenting knives removably secured to the leading portions of said hammers;

e. said knives having axially extending radially outermost edges and axially extending radially innermost edges spaced radially from said outermost

edges; and

f. replaceable members radially between each pair of hammers having outer ends traveling in a circumferential path of greater radial extent than the circumferential path of said innermost edges on said knives.

12. In a fragmenting rotor assembly for waste wood and other fragmentable material:

a. a drive shaft and mechanism for driving said shaft in a direction of rotation;

b. a series of generally radially projecting hammers situated along the axis of said shaft and powered by said shaft, the hammers having a leading portion and a trailing portion;

c. fragmenting knives removably secured to the leading portions of said hammers;

d. said knives having axially extending reducing edges; and

e. deflecting members mounted independently of said hammers and in radial alignment therewith having outer ends traveling in a circumferential path of lesser radial extent than the circumferential path of said knife edges.

13. The assembly of claim 12 wherein said hammers are offset radially to dispose said knives in a forwardly radially tilted position with respect to the axis of said shaft.

14. The assembly of claim 12 wherein a plurality of axially spaced discs are provided on said shaft and each disc mounts pairs of said hammers on opposite sides thereof to dispose two axially adjacent hammer paths of travel in said spaces, deflecting members are mounted independently in the spaces between said discs in radial alignment with said hammers, and said deflecting members and hammers in axially adjacent spaces are axially reversed in radial alignment.

15. The assembly of claim 12 wherein said deflecting members comprise generally oblong bodies with a central portion and with lobular outer ends, and said hammers and deflecting members are helically staggered along the axis of said shaft with each deflecting member lobular end being in radial planar alignment with a hammer knife.

16. The assembly of claim 12 wherein said hammers mount to the radially outer sides of each disc and the knives are of such axial extent that their paths of annular travel axially overlap.

17. The assembly of claim 16 wherein the knives of hammers secured to the opposite sides of the same disc have a path of overlap.

18. The assembly of claim 17 where the knives of the hammers secured to adjacent discs also have axially overlapping paths of travel but of lesser axial extent.

19. In a fragmenting rotor assembly for waste wood

and other fragmentable material:

a. a drive shaft and mechanism for driving said shaft in a direction of rotation, said drive shaft incorporating axially spaced discs along its axis;

b. a series of radially projecting hammers situated along the axis of said shaft on said discs and powered by said shaft, the hammers having a leading portion and a trailing portion;

c. fragmenting knives removably secured to the leading portions of said hammers;

d. said knives having axially extending reducing edges; and

e. said hammers being mounted at the sides of each disc with their knives being of such axial extent as to have axially overlapping paths of rotary travel and the discs being so spaced that said knives on the confronting sides of adjacent discs also have axially overlapping paths of travel.

20. The assembly of claim 19 wherein spacer members are provided in radial alignment with said hammers circumferentially between them.

21. The assembly of claim 20 wherein a series of circumferentially spaced axially extending rods are provided to extend between said discs and said hammers and spacers are mounted on said rods in radially alternating relation with said hammers.

22. The rotor assembly of claim 21 wherein end

plate assemblies are provided at each end of said rotor assembly and include end plates with cavities for receiving circumferentially adjustable locking plates, the end plates and locking plates both having rod receiving openings which can be aligned in a rod removing position and which receive said rods.

23. In a fragmenting rotor assembly for waste wood and other fragmentable material

a. a drive shaft and mechanism for driving said shaft in a direction of rotation;

b. a series of radially projecting hammers situated along the axis of said shaft and powered by said shaft, the hammers having a leading portion and a trailing portion;

c. a series of discs forming a part of said shaft axially between at least a pair of radially aligned hammers;

d. fragmenting knives removably secured to the leading portions of said hammers;

e. said knives having axially extending radially outermost edges; and

f. deflecting members radially aligned with said hammers having lobular outer ends traveling in a circumferential path of lesser radial extent than the circumferential path of said edges on said knives.

24. The assembly of claim 23 wherein said hammers have rearwardly and radially inwardly inclined knife

mount front surfaces on their radially outer ends with opposed radially inwardly spaced oppositely inclined front surfaces, generally oblong cutting knives with upper front cutting surfaces lie against said knife mount surfaces, and wedge blocks, having one surface engaged with one of said knives and another surface engaged with one of said oppositely inclined surfaces, removably secure each knife in position.

25. The assembly of claim 23 wherein said hammers are mounted off a radial central plane to tilt forwardly with respect to a radial plane through said axis and dispose said knife cutting edges forwardly.

26. In a method of making a fragmenting rotor assembly for waste wood and other fragmentable material:

a. providing a drive shaft and mechanism for driving said shaft in a direction of rotation;

b. providing a series of radially projecting hammers situated along the axis of said shaft and powered by said shaft, the hammers having a leading portion and a trailing portion;

c. providing fragmenting knives with axially extending reducing edges removably secured to the leading portions of said hammers; and

d. mounting separately replaceable deflecting members independently of said hammers radially between each pair of hammers which have outer ends moving in a circumferential path of lesser radial extent than the

circumferential path of said knife edges.

27. The method of claim 26 comprising providing said deflecting members as generally oblong bodies with a central portion and with lobular outer ends, and providing said hammers and deflecting members in helically staggered relation along the axis of said shaft with each deflecting member lobular end in radial plane alignment with a hammer knife.

28. The method of claim 26 comprising mounting said hammers at the sides of each disc so that the knives are of such axial extent that their paths of annular travel axially overlap.

29. The method of claim 26 wherein the knives of hammers secured to the opposite sides of the same disc have a rotary path of axial overlap.

30. The method of claim 26 comprising mounting said deflecting members in radial alignment with said hammers.

31. The method of claim 30 comprising mounting a series of circumferentially spaced axially extending pairs of rods to extend between said discs, and mounting said hammers and deflecting members on said rods to extend between said pairs of rods in radially alternating relation.